

## REMARKS

By the present amendment, Claims 1, 5-10 and 14-18 have been amended. Claims 1-18 remain pending in the application, with Claims 1, 5-10 and 14-18 being the independent claims. Claims 1-4 and 10-13 are again rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim (U.S. Patent No. 5,960,029) in view of Kishi (U.S. Patent No. 6,888,813 B1) and Johnston (U.S. Patent No. 5,481,614). Claims 5, 7, 8, 14, 16 and 17 are again rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Kishi. Claims 6, 9, 15 and 18 are again rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Kishi and Bottomley (U.S. Patent No. 6,515,980 B1).

Claims 1, 5-10 and 14-18 have been amended to recite, in part, that the information bit is an information bit of the transmission data.

The Examiner concedes that Kim fails to disclose generating a modulated pilot channel at a designated phase, and that neither Kim nor Kishi disclose that the burst channel transmits side information being dependent on the transmission data according to at least one of the phase, and the complex channel and the orthogonal code. The Examiner states that Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal, and that Johnston discloses a bit flag which specifies the coding mode of the band to transmit side information. The Examiner asserts that it would have been obvious to incorporate the modulation and spreading method of Kishi into Kim, and to incorporate the side information transmission method of Johnston into the combined inventions of Kim and Kishi.

Kim describes a coherent dual-channel QPSK modulator/demodulator for a CDMA system and inputs a spreading pilot signal to an I-channel and a Q-channel with different Walsh codes. Kishi describes a CDMA transmission system and simultaneously transmitting a pilot signal obtained by spreading with a specific spread code. Johnston describes a method and apparatus for coding audio signals based on a perceptual mode, and transmitting a bit flag indicating a code mode of the band, through which the side information is transmitted, detecting

a phase error from the received pilot signal, and compensating for the phase error occurred in the received and modulated signal generated by padding.

The Examiner relies on Kishi, col. 2, lines 11-14, for teaching a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal. The known phase value of Kishi is used to compensate for a phase error. Kishi does not generate a modulated pilot signal according to an information bit of the transmission data.

The Examiner relies on Johnston, col. 21, lines 3-6, for teaching a bit flag which specifies the coding mode (indicative of channel information) of the band to transmit side information. This area of Johnston is associated with a description of the use of a stereophonic coder. The stereophonic coder analyzes information of data in two stereo channels. An orthogonal coding decision is considered for each data segment. The decision is based on a choice between independent coding of the channels, mode RIGHT/LEFT (R/L) or joint coding using the SUM and DIFFERENCE channels (S/D). If the threshold at the two channels differs by less than a predefined value, such as 2 dB, then the S/D coding mode is chosen. If the threshold at the two channels differs by greater than the predefined value, then R/L coding is chosen. The bit flag of Johnston that specifies the coding mode of the associated band is not an information bit of the transmitted data.

In contrast, the present invention transmits transmission data by generating a modulated pilot signal according to an information bit of the transmission data, and not an otherwise 'known' phase value of Kishi, or a bit flag of Johnston that specifies the coding mode of the associated band. The present invention also predefines information bits respectively corresponding to orthogonal codes, selects an orthogonal code among the predefined orthogonal signals, and spreads a modulated pilot signal with the selected code. Therefore, the spread modulated symbol by itself indicates the information bit corresponding to the selected orthogonal code.

Therefore, Kim, Kishi, Johnston, or any combination thereof, fails to teach or reasonably suggest transmitting transmission data by generating a modulated pilot signal according to an

information bit of the transmission data for designating at least one of the phase and the complex channel. Kim, Kishi, Johnston, or any combination thereof, also fails to teach or reasonably suggest side information being dependent on the transmission data according to at least one of the phase, and the complex channel and the orthogonal code.

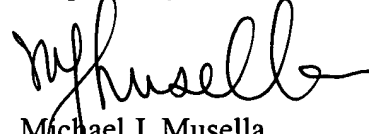
Accordingly, amended Claims 1 and 10 are allowable over Kim, Kishi, Johnston, or any combination thereof.

While not conceding the patentability of the dependent claims, *per se*, Claims 2-4 and 11-13 are also allowable over Kim, Kishi, Johnston, or any combination thereof, for at least the above reasons.

Amended Claims 5-9 and 14-18 contain similar recitations to Claims 1 and 10 and are allowable over the cited art for at least the above reasons.

Accordingly, all of the claims pending in the Application, namely, Claims 1-18, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,



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